

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
16 December 2004 (16.12.2004)

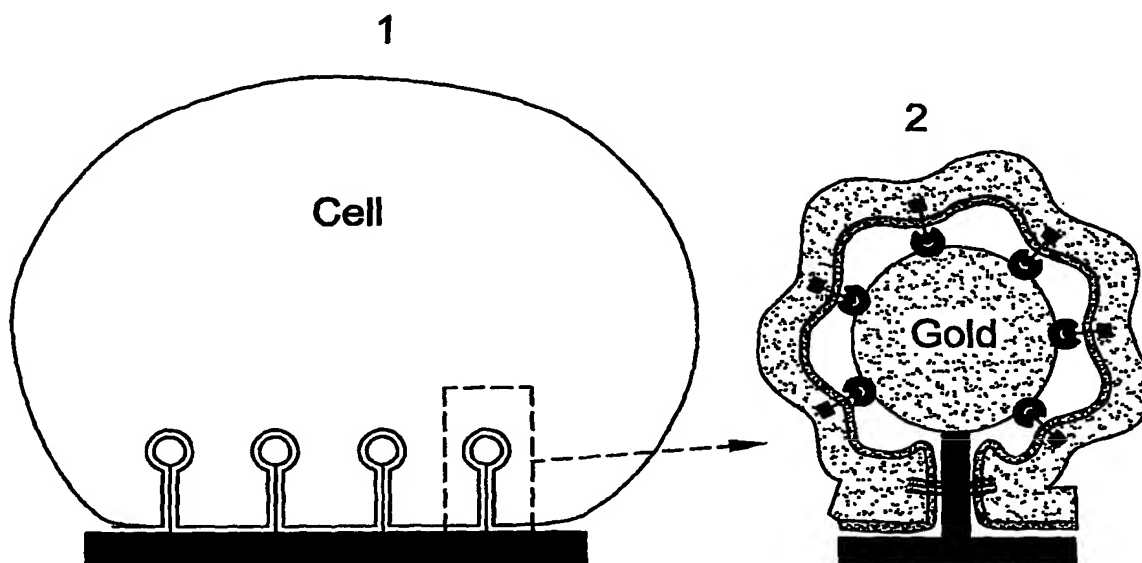
PCT

(10) International Publication Number  
**WO 2004/109282 A1**

- (51) International Patent Classification<sup>7</sup>: **G01N 33/543**, 27/414, 33/68
- (74) Agent: **REINHOLD COHN AND PARTNERS**; P.O.B. 4060, 61040 Tel-Aviv (IL).
- (21) International Application Number:  
PCT/IL2004/000502
- (22) International Filing Date: 10 June 2004 (10.06.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/477,037 10 June 2003 (10.06.2003) US
- (71) Applicant (for all designated States except US): **YISSUM RESEARCH DEVELOPMENT COMPANY OF THE HEBREW UNIVERSITY OF JERUSALEM** [IL/IL]; Hi Tech Park, Edmond Safra Campus, Givat Ram, 91390 Jerusalem (IL).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **SPIRA, Micha** [IL/IL]; 7 Malki Street, Yemin Moshe, 94102 Jerusalem (IL). **YITZCHAIK, Shlomo** [IL/IL]; 6/1 Davidson Street, 93708 Jerusalem (IL). **SHAPPIR, Joseph** [IL/IL]; 30 Hermon Street, P.O.BOX 85310, 90805 Mevasseret Zion (IL).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:  
— with international search report

[Continued on next page]

(54) Title: **ELECTRONIC DEVICE FOR COMMUNICATION WITH LIVING CELLS**



(57) Abstract: The present invention provides a surface-substrate for adherence of cells thereto. The surface-substrate comprises at least one micronail structure protruding from the surface, at least a region of the micronail having cellular-internalization promoting properties. The invention also provides an electronic device comprising a transistor structure, in which a gate electrode is formed with the at least one micronail protruding from the surface thereof.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*